WHAT IS CLAIMED IS:

1. A method for fabricating a mesh structure mounted between an anode plate and a cathode plate of a tetraode field-emission display, comprising:

forming a soft insulation coating layer on a flat film;

laminating a metal conductive plate as a converging electrode layer with a plurality of first apertures to the coating layer, such that a filler of the coating layer is filled in each first aperture;

removing the coating layer but remaining the filler in each first aperture after baking;

forming another coating layer on the converging electrode layer as an insulation layer;

sintering to harden the insulation layer;

forming a gate layer with a plurality of third apertures corresponding to the first apertures on the insulation layer, respectively;

sintering to have the gate layer firmly attached on the insulation layer;

forming one protective layer on the gate layer with a plurality of through holes corresponding to the third apertures, respectively, such that a plurality of second apertures are formed on the insulation layer by etching;

forming another protective layer on the converging electrode layer with another through hole corresponding to each first aperture, such that each filler is removed by etching; and

removing the first and the second protective layers.

2. The method of Claim 1, wherein the coating layer forming step includes forming a glass glue or a silicon oxide.

3. The method of Claim 2, wherein the glass glue is a glass coating paste DG001 produced by DuPond Company.

4. The method of Claim 1, wherein the step of forming the coating layer on the flat film further comprises forming the coating layer by a free contact coating process.

5. The method of Claim 1, wherein the coating layer forming step includes forming the coating layer with an uniform thickness.

6. The method of Claim 1, wherein the converging electrode layer is selected from a metal conductive plate that has a thermal expansion coefficient similar to that of the anode and the cathode.

7. The method of Claim 6, wherein the metal conductive plat is an iron and nickel composite plate.

8. The method of Claim 1, wherein the laminating step further comprises performing a pressing apparatus for laminating.

9. The method of Claim 1, wherein the coat layer removing step includes performing a low-temperature baking.

10. The method of Claim 1, wherein the step of forming the coating layer on the converging electrode layer further comprises forming the coating layer by a free contact coating process or a fully printing process with no pattern.

11. The method of Claim 1, wherein the gate layer forming step further comprises forming the gate layer by a screen printing or a photolithographic process.

12. The method of Claim 1, wherein the gate layer forming step includes forming a photosensitive silver glue.

13. The method of Claim 12, wherein the photosensitive silver glue is a silver conductive paste DC206 produced by DuPond Company.

14. The method of Claim 13, wherein the gate layer forming step further comprises performing a lithographic process to form the third apertures by using low-concentration sodium carbonate solution as the developer.

15. The method of Claim 1, wherein the protective layer forming step further comprises forming the protective layer by a screen printing or a photolithographic process.

16. The method of Claim 1, wherein the protective layer forming step includes forming a dry film with negative type photoresist, and a low-concentration sodium carbonate solution is used to develop the through holes.

17. The method of Claim 1, wherein the etching is performed by a low-concentration nitric acid solution.

18. The method of Claim 1, wherein protective layer removing step includes removing the first and the second protective layer by a low-concentration sodium hydroxide solution.